

EXTENDING TPB MODEL: FROM INDIVIDUAL CHOICES TO PROMOTING GREEN REAL ESTATE VALUES

Vu Minh Thy^{*}, Nguyen Thi Hong Chau¹, Tran Phu Thanh², Tran Khanh Lynh³, Nguyen Phuong Quynh¹

¹Faculty of Finance & Banking, Hoa Sen University

²Foreign Trade University Ho Chi Minh City Campus

³Alumnus of Faculty of International Trade and Logistics, Hoa Sen University

Article information

Received: 10/2024

Accepted: 12/2024

Available online: 12/2024

ABSTRACT

Vietnam had 907 urban areas as of August 8, 2024, indicating significant urbanisation that has resulted in less residential land, increased pollution, and a growing demand for clean, green living spaces. The COVID-19 pandemic emphasised the significance of healthy, environmentally friendly environments, which fuelled the growth of green real estate. This sector comprises technology such as renewable energy, low-emission materials, and sustainable designs, which provide environmental and community benefits. Consumers are increasingly willing to pay a premium for such traits if they realise their worth.

However, research on green real estate in Vietnam is still sparse, with a primary focus on developer viewpoints. The study "From Personal Choices to the Mission of Spreading Green Real Estate Values-Expanding the Theory of Planned Behaviour (TPB)" seeks to predict consumer behaviour and discover factors that influence green real estate purchases. It investigates basic TPB components—subjective norms, attitudes, and perceived behavioural control—as well as environmental awareness and demography. The study also presents a community value diffusion model to investigate green real estate's broader impact and makes legislative recommendations to encourage its implementation.

Tính đến ngày 8 tháng 8 năm 2024, Việt Nam có 907 đô thị, phản ánh quá trình đô thị hóa mạnh mẽ dẫn đến giảm đất ở, gia tăng ô nhiễm và nhu cầu ngày càng cao về không gian sống sạch và xanh. Đại dịch COVID-19 đã nhấn mạnh tầm quan trọng của môi trường sống lành mạnh, thân thiện với môi trường, thúc đẩy sự phát triển của bất động sản xanh. Lĩnh vực này áp dụng các công nghệ như năng lượng tái tạo, vật liệu ít phát thải và thiết kế bền vững, mang lại lợi ích cho môi trường và cộng đồng. Người tiêu dùng ngày càng sẵn sàng trả giá cao hơn cho các bất động sản như vậy khi họ nhận ra giá trị của chúng.

Tuy nhiên, nghiên cứu về bất động sản xanh tại Việt Nam vẫn còn hạn chế, chủ yếu tập trung vào quan điểm của nhà phát triển. Nghiên cứu "Từ lựa chọn cá nhân đến sứ mệnh lan tỏa giá trị bất động sản xanh - Mở rộng Lý thuyết Hành vi Dự kiến (TPB)" nhằm dự đoán hành vi của người tiêu dùng và xác định các yếu tố ảnh hưởng đến quyết định mua bất động sản xanh. Nghiên cứu xem xét các yếu tố cơ bản của TPB—chuẩn mực chủ quan, thái độ và nhận thức kiểm soát hành vi—cùng với nhận thức về hiệu quả môi trường và nhân khẩu học. Ngoài ra, nghiên cứu còn giới thiệu mô hình lan tỏa giá trị cộng đồng để phân tích tác động và đưa ra các khuyến nghị chính sách nhằm khuyến khích áp dụng bất động sản xanh.

Keywords: Expanded TPB model, sustainable development, green standards, green consumption, green real estate, and consumer behaviour

* Corresponding author:

Email: thyminhvu2003@gmail.com

1. INTRODUCTION

As of August 8, 2024, Vietnam had 907 urban areas, reflecting rapid urbanization. This growth has led to crowded cities, less residential land, and severe pollution. Urban residents now prioritize clean, natural living spaces, especially after COVID-19. Green real estate has gained traction, focusing on eco-friendly materials, renewable energy, and sustainable designs. Unlike traditional projects, it emphasizes low emissions and reduced concrete use, aligning with sustainable development. Consumers are increasingly willing to pay more for these properties when they see the environmental and community benefits.

Research on acquiring green real estate in Vietnam is scarce, with most studies concentrating on developers' perspectives. The study "Extending TBP Model: From individual choices to promoting green real estate values" seeks to forecast user behaviour and attitudes and identify factors influencing the decision to purchase green real estate. The study looks at the TPB framework's essential parts (subjective norms, attitudes, and perceived behavioural control) and other variables like environmental efficacy awareness and demography. In addition, a community value diffusion model is provided to analyse the impact, with policy recommendations to increase the use and value of green real estate.

The study is divided into five sections: Introduction, Literature Review and Theoretical Frameworks, Research Methodology and Data Collection, Findings and Discussion, Conclusion.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORKS

2.1. Related concepts

2.1.1. Green Real Estate

Extending TBP Model: From individual choices to promoting green real estate values seeks to forecast user behaviour and attitudes and identify factors influencing the decision to purchase green real estate. The study looks at the TPB framework's essential parts (subjective norms, attitudes, and perceived behavioural control) and other variables like environmental efficacy awareness and demography. In addition, a community value diffusion model

is provided to analyse the impact, with policy recommendations to increase the use and value of green real estate.

Trần Linh Huân and Hà Gia Linh (2024) define green real estate as a kind of property that is planned, constructed, and managed in a sustainable and ecologically friendly way, emphasising resource preservation, enhancing the quality of life, and safeguarding the environment. To achieve a peaceful coexistence of humans and the environment, this trend integrates four elements: architecture, people, technology, and the environment (Wang et al., 2024). According to Hou et al. (2023), green real estate must manage the entire lifecycle of buildings, from raw materials, construction, resource utilisation, and waste disposal to redevelopment, to express a sustainable vision and responsibility for future living spaces.

2.1.2. Green certification

Green building certifications assess sustainability, resource efficiency, and environmental impact. They attract investors, reduce construction harm, and add project value. Key certifications include:

- LEED (U.S.): Focuses on sustainable design, energy, water, materials, and innovation.
- BREEAM (UK): Evaluates energy, water, pollution, transport, materials, and management.
- EDGE (IFC): Requires at least 20% resource savings, promoting efficient designs.
- LOTUS (Vietnam): Tailored to local conditions, emphasizing eco-friendly materials, air quality, and energy savings.

Green certification adds value to projects, certifies sustainability pledges, and helps create a green consumer base.

2.2. Theoretical basis and empirical research

2.2.1. Factors affecting users' willingness to pay

Consumer behaviour and culture influence the popularity of green real estate. According to research, users are at the centre of everything, from customer happiness to purchasing decisions. Green real estate efforts will be futile if the design or materials are not accepted. Environmental awareness and concern are intimately related to the choice of green buildings.

According to Nguyễn Quang Hồng et al. (2020), perceived behavioural control has the most impact on the intention to acquire green flats, followed by attitude, perception of environmental effectiveness, and subjective norm. Trần Văn Đạt (2022) emphasises the importance of product experience and ecological perspectives.

According to Tan (2014), significant motivations in Malaysia include financial incentives, environmental sustainability, energy efficiency, and liveability. Lan and Sheng (2014) highlight aspects such as cost, ecological perception, green materials, consumption habits, and income in Taiwan. Kongkajaroen et al. (2014) emphasise that mindset is an essential aspect of Generation Y. Still, Tan, and Goh (2018) argue that psychological variables such as ethical duty and perceived value drive the intention to buy green homes. Zhang et al. (2018) believe that government incentives are the most crucial factor in China.

In conclusion, perception, environmental concern, and environmental awareness are essential in buying green real estate.

2.2.2. The Theory of Planned Behavior (TPB)

Ajzen's Theory of Planned Behaviour (TPB) (1991), derived from the Theory of Reasoned Action (TRA), consists of the following components: attitude towards behaviour (ATB), subjective norm (SN), perceived behavioural control (PBC), and behavioural intention (IB)—characteristics that predict individual behaviour. Ellen et al. (1991) defined perceived environmental effectiveness (PEE) as the effectiveness of green consumer actions in addressing environmental challenges.

The expanded TPB model has been used in various investigations. Nguyễn Đức Bảo et al. (2023) examined how knowledge affects the energy-saving attitudes of young people in Vietnam. Lê Chí Công and Trần Hoàng Tuyết Hương (2023) investigated the effect of information on tourists' intention to buy green packaging in Nha Trang.

This study uses the original and expanded TPB to investigate the factors influencing the intention to buy green real estate and the potential for spreading green values. Understanding customer attitudes and psychology is critical for businesses when producing green real estate goods that suit living demands while protecting the environment. TPB is frequently used in research on green consumption and focuses on the consumption chain (Bagozzi, 1981).

2.2.3. Technology Acceptance Model (TAM)

According to Davis (1989), the Technology Acceptance Model (TAM) is a strong framework for understanding consumer technology adoption that is frequently used due to its utility and efficacy in interpretation (Wu et al.).

In TAM, attitudes regarding technology's usefulness and ease of use are essential predictors of attitude, intention, and adoption behaviour (Lah et al., 2020). Perceptions of utility, convenience, and external influences influence technology adoption intentions (Bhattacharjee & Sanford, 2009). Wang et al. (2024) define "perceived usefulness" as the consumer's perception of the environmental benefits of green real estate over conventional real estate, and "perceived ease of use" refers to the direct benefits of owning and using green real estate.

Much research has used TAM to analyse client attitudes and intentions, including in Fintech and mobile payments (Hu et al., 2019; Meyliana et al., 2019). Trust is key to technological acceptance attitudes (Fernando et al., 2018; Stewart & Jürjens, 2018). Teo et al. (2012) also noted that people with higher earnings are more trusting and less willing to take risks when utilising technology.

2.3. Contribution of the Study

2.3.1. Spreading values to the community: The intention to introduce green real estate products in particular and green products in general to surrounding relationships

Because of the novelty of the concept, there is currently little research on green real estate around the world, including Vietnam. Wang et al. (2024) investigated the willingness to pay for green real estate in Asia using the TAM theory. In Vietnam, necessary studies include Nguyễn Quang Hồng et al. (2020) on the intention of Hanoi's youth to buy green apartments and Trần Văn Đạt (2022) on green initiatives in the Southeast.

Green real estate is gaining popularity due to its sustainability, environmental friendliness, and status as a legacy asset. Raising public awareness and disseminating information about green products is critical. However, current research has concentrated chiefly on knowledge and purchase intentions, with little attention on the ability to communicate environmental ideals with the community.

Hooff and Ridder (2004) and Foss et al. (2009) define knowledge sharing as exchanging information between the sharing and receiving parties. According to Gupta and Govindarajan (2000), this comprises the dissemination of knowledge to motivate action. According to Gagné and Deci (2005), individuals perform both roles, receiving and distributing knowledge depending on the context. Knowledge sharing promotes the distribution of skills and experiences, resulting in competitive advantages (Hendriks, 1999) and improved collaboration and team performance (Boland & Tenkasi, 1995; Davenport & Prusak, 1998; Cheng & Li, 2011).

Knowledge sharing in the real estate industry is a successful marketing strategy, as it can create a green community and increase environmental consciousness. Governments, corporations, and the educational system aggressively promote green lifestyles, focusing on the younger generation.

2.3.2. Purchase intentions and the dissemination of green values among the community are influenced by income

Compared to the West, Vietnam's multigenerational lifestyle has produced a distinct viewpoint on real estate purchase intents. Household and personal income can influence the intention to purchase and promote green real estate. Conversely, hardly much research has specifically looked at this relationship.

Nguyễn Quang Hồng et al.'s (2020) study on the intention to purchase green flats in Hanoi lists income as one of the demographic determinants, but it does not offer any concrete evidence of its influence. Thus, we concentrate on conducting additional studies on how income affects purchase intentions and disseminating green values.

2.3.3. A subjective survey measure for assessing considerations when purchasing environmentally friendly real estate

Subjective norm (SN) refers to the external pressure that an individual perceives when performing a behaviour. This study examines SN through observing and exchanging information from the media, social networks, and relationships to evaluate the factors that constitute green real estate according to the criteria of the WGBC, including (1) efficient use of energy, water, and other resources; (2) use of renewable energy; (3) solutions to reduce pollution, waste, and recycling/reusing; (4) ensuring indoor air quality; (5) use of non-toxic, responsible, and sustainable materials; (6) considering environmental factors in design, construction, and operation; (7) considering the quality of life factors in design, construction, and operation; (8) design ensuring adaptation to environmental changes. The analysis of the study reveals some noteworthy relationships: (1) water conservation and recycling - intention to buy green real estate; (2) ensuring comfort and health, prioritising natural light, ensuring views, open spaces, and airflow - intention to buy green real estate; (3) the relationship between using recyclable/reusable materials, creating a sustainable and energy-efficient environment - the spread of community values; (4) household income - the spread of values to the community.

2.3.4. The authors' group's data collection methods differ from those used in previous studies

Green real estate is an emerging trend, with 40% of respondents aware of global green standards like LEED, BREEAM, EDGE, and Vietnam's LOTUS certifications.

Online surveys via social media are commonly used in real estate research. For example, Wang et al. (2024) applied a "snowball" method, sharing questionnaires on platforms like WeChat and Line. However, limited interaction often leads to misunderstandings, especially with niche topics like green real estate.

In this study, surveys were shared with family, friends, and community groups. Direct interaction ensured respondents understood the questions, providing accurate and reliable data.

2.4. The proposed research model and the study's hypothesis

2.4.1. The proposed research model

This study provides two models for analysing consumers' intentions to purchase green real estate and the distribution of values throughout the community. The first model is based on the Theory of Planned Behaviour (TPB), with the desire to buy green real estate as the dependent variable. This model's independent variables include attitudes, subjective norms, perceived behavioural control, and perceptions of environmental efficacy. Demographic characteristics are also used to control their impact on buying inclinations.

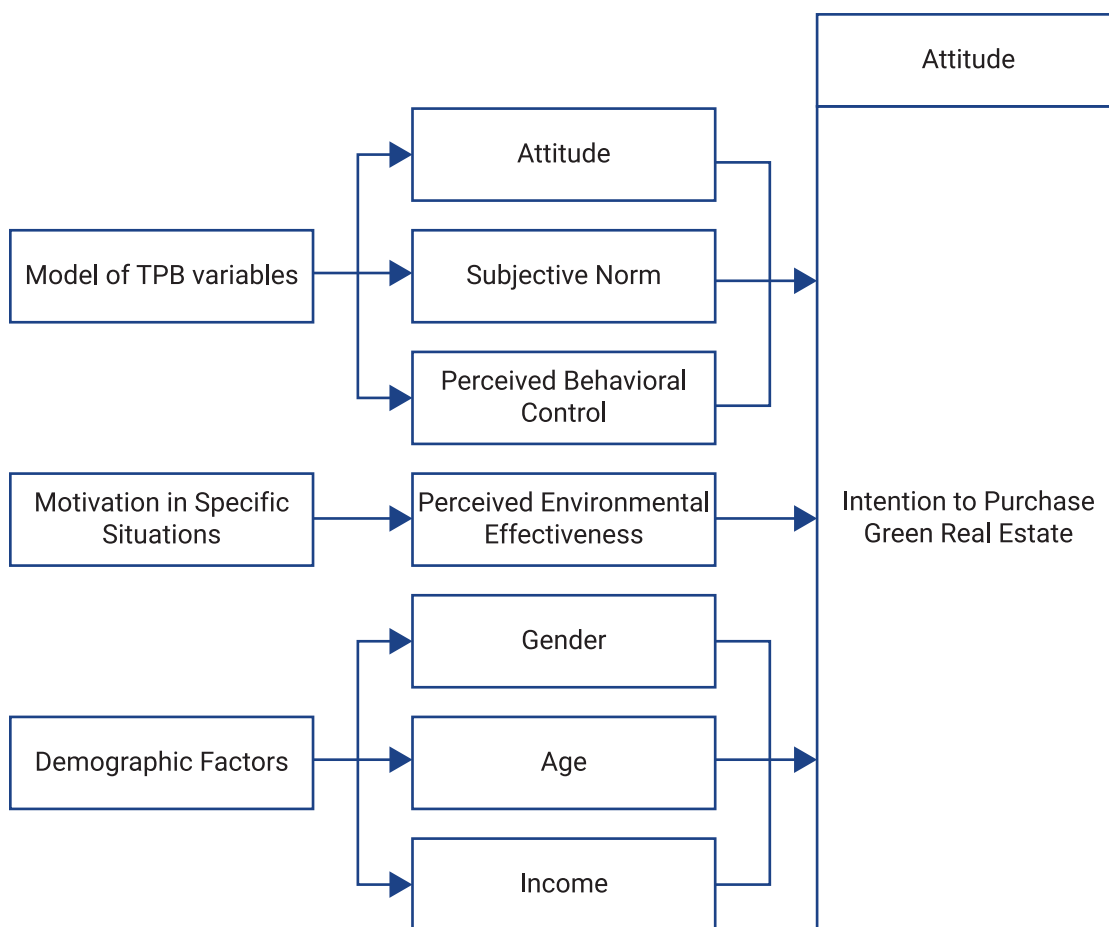


Figure 1: Proposed Research Model 1
(Source: Conducted by research team.).

The study's uniqueness is evident in the second model, which incorporates the variable "Spread of values to the community." This variable assesses the intention to buy green real estate and the ability to convey information about its benefits to the community, friends, and family. This update seeks to investigate the more extensive community impact of green real estate purchases and inform plans for increasing green product demand.

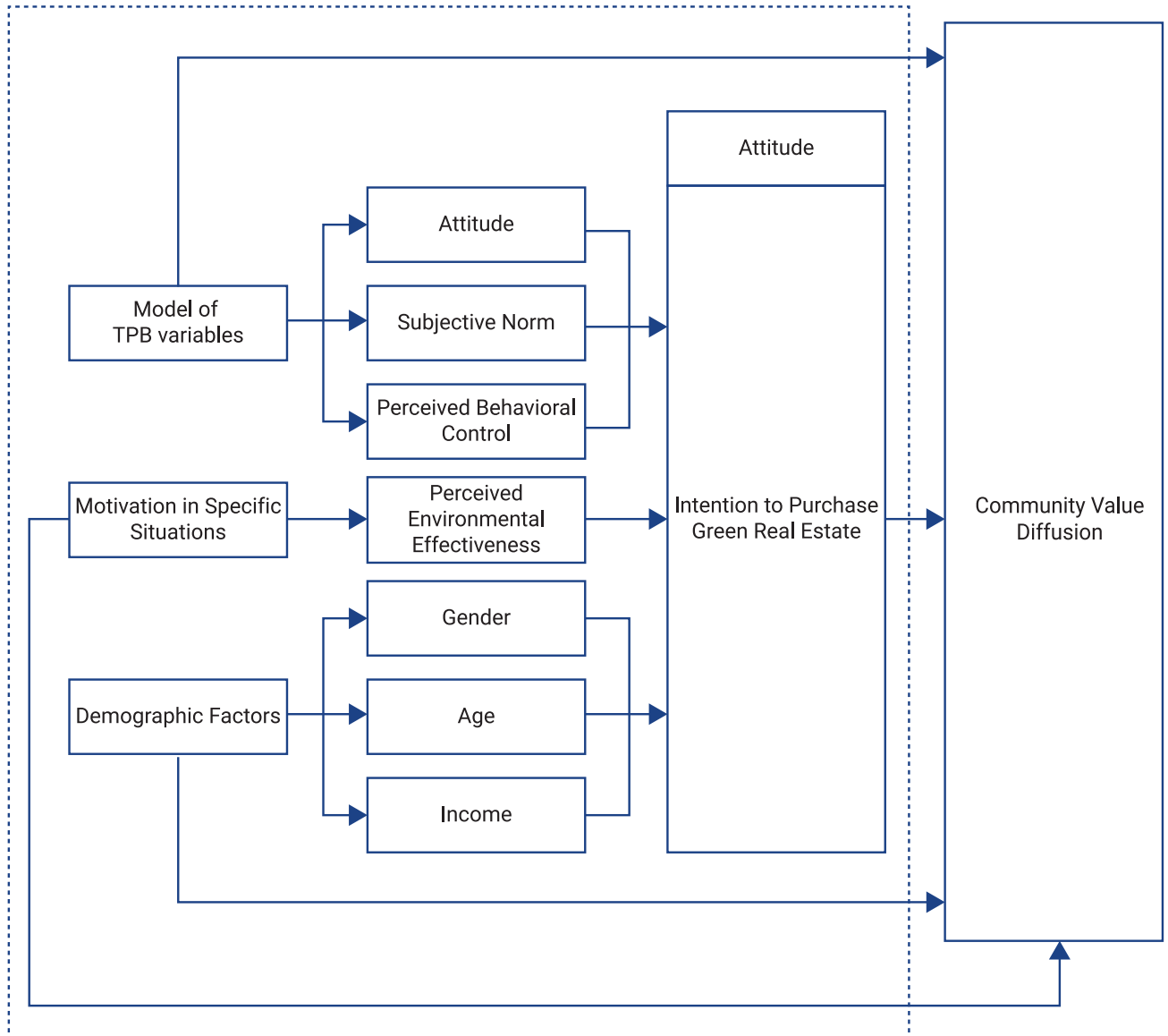


Figure 2: Proposed Research Model 2

(Source: Conducted by research team)

2.4.2. Research hypothesis

2.4.2.1. Demographics and Intention to Buy Green Real Estate

Nelson and Rabianski (1988) noted that psychological and demographic factors influence home-buying decisions, while Violand and Simon (2011) found demographics shape real estate buyer behavior in France. In Vietnam, the cultural mindset of "settling down to build a career" drives the desire for homeownership.

Demographics play a key role in green consumption. Ibok et al. (2014) identified factors like education, gender, age, income, homeownership, and location as influential in promoting green behavior. Green marketers can tailor strategies by addressing these variables to boost green product adoption.

Gender: Men were historically more willing to pay for environmental protection (Reigenstein et al., 1974), but recent studies show women exhibit greater environmental concern and stronger green behavior (Lee, 2009).

Age: The younger generations, such as Gen Z, are highly focused on sustainability and are influencing purchasing trends across age groups. They prioritize environmentally friendly products and practices, demonstrating strong preferences for sustainability when making purchasing decisions (Insight, 2021).

Income: Higher or middle-income consumers tend to be more eco-conscious (Hendon, 1972). However, Samdahl and Robertson (1989) argue that income and education alone are not reliable predictors of ecological awareness.

Understanding these factors helps investors and marketers design strategies that align with consumer preferences and behavior.

The group proposed three hypotheses: Gender (SEX), Age (AGE), and Income (INC).

Hypothesis 1: Gender has a beneficial influence on the intention to buy green real estate.

Hypothesis 2: Age has a beneficial influence on the desire to buy green real estate.

Hypothesis 3: Income has an influence on the desire to buy green real estate.

2.4.2.2. Theory of Planned Behaviour and Intention to Buy Green Real Estate

Perceived Behavioral Control (PBC) reflects how easy or difficult an individual feels a behavior is to perform. It includes self-efficacy (confidence in ability) and control beliefs (resources and opportunities available). Taylor and Todd (1995) found that confidence based on available information strongly affects PBC, which in turn significantly influences the intention to buy green real estate.

Subjective Norms (SN) refer to external social pressures influencing behavior. Positive SN can encourage intentions to act. Ajzen (1991) defines SN as the perceived social influence that may inspire or discourage behavior. In green purchasing, SN includes the support or opposition from government, social networks, friends, and family, all of which shape buying intentions (Zahan et al., 2020; Duong et al., 2022).

Attitude Toward Behavior (ATT) is an individual's evaluation of a behavior and their intention to perform it. In green real estate, ATT represents positive perceptions of the environmental and health benefits of sustainable products (Chekima et al., 2016; Kamalanon et al., 2022).

Studies confirm that ATT, PBC, and SN are key predictors of behavioral intention. Maichum et al. (2016) showed that these factors positively impact green product purchase intentions among Thai consumers. Thus, the three hypotheses representing ATT, PBC, and SN impacting the intention to purchase green real estate are:

Hypothesis 4: Perceived Behavioural Control influences the propensity to purchase green real estate.

Hypothesis 5: Subjective norms influence the propensity to purchase green real estate.

Hypothesis 6: Attitude influences the propensity to purchase green real estate

2.4.2.3. Environmental Efficacy Perception and Intention to Buy Green Real Estate

Fryxall and Low (2003) described environmental awareness as a broad understanding of ecological principles, current concerns, and the state of essential ecosystems. Meanwhile, Mostafa (2009) proposed that customers' willingness to buy green products is closely tied to environmental knowledge. Individuals confident that their activities to conserve natural resources and the environment will result in beneficial consequences are more likely to engage in pro-environmental behaviours that support and foster concerns about themselves and the environment. Thus, the group advances the theory regarding Environmental Efficacy Perception (AE):

Hypothesis 7: Environmental efficacy perception influences the intention to buy green real estate.

2.4.2.4. Demographics and the Spread of Values within the Community

Demographic considerations influence the willingness to spread beliefs throughout the community. Gender, in particular, influences knowledge-sharing behaviour. Gender influences particular behavioural patterns and clarifies the social behaviour of men and women. According to social exchange theory, Boardia et al. (2006) found that knowing, evaluating, and perceiving the benefits of sharing knowledge influence the intention to share knowledge, and gender influences the intention to distribute understanding within the community. Our group suggests the following hypothesis on the gender factor:

Hypothesis 8: Gender influences the diffusion of values in the community.

According to most studies, age disparities can impede information sharing because middle-aged people's viewpoints and thinking differ from those of younger people. Shi-Jer Lou et al. (2007) discovered that people between 30 and 39 share their knowledge more frequently than those aged 40 to 49. The research group proposes the theory on the age factor as follows:

Hypothesis 9: Age impacts the spread of values in the community.

Income plays a key role in real estate purchasing decisions, helping segment clients and understand demand. Green real estate incorporates advanced technologies in design and operations, making it more than a standard product. Investigating consumers' willingness to pay for these technologies can help investors adapt them to Vietnamese culture.

Gulamhuseinwala et al. (2015) found that higher-income individuals are more likely to adopt modern technologies, benefiting more from their use. This study explores whether wealthier customers, who can afford green real estate, are also willing to share its environmental values with others. Thus, income (INC) may influence the spread of green values within the community.

Hypothesis 10: Income impacts the spread of values throughout the community.

2.4.2.5. Perceived behavioural Control and the Diffusion of values in the Community

Perceived Behavioural Control (PBC) shows how people perceive their ability to accomplish a particular activity and how they see and feel about how difficult or easy the action is to perform. This control factor might be internal, such as skills and knowledge, or external, such as time and opportunity (Ajzen, 1991). In information diffusion, behavioural control relates to the doctor's assessment of how easy or difficult it is to regulate the knowledge-sharing process (Chau & Hu, 2001). Based on these findings, it is clear that perceived behavioural control (PBC) influences the spread of values within society.

Hypothesis 11: Perceived behavioural control influences the spread of values within the community.

Subjective Norms (SN) reflect individuals' beliefs about whether a behaviour is acceptable or encouraged. Hassan et al. (2009) studied students living in dorms and discovered that friends' subjective standards and influence might effectively persuade students to conserve energy. As a result, subjective norms (SN) influence the spread of values throughout the community (SP).

Hypothesis 12: Subjective norms influence the diffusion of values throughout the community.

Attitude (ATT) is a key behavioural element (Ajzen & Fishbein, 1980). People who believe sharing and disseminating information that provides practical value is worthwhile will be enthusiastic about spreading that value. The willingness and confidence to share stem from the individual's information, expertise, and experience, which can be shared with society. Thus, the study group presents the following hypothesis:

Hypothesis 13: Attitude influences the diffusion of values throughout the community.

2.4.2.6. Environmental efficacy perception and value diffusion in the community

Schultz et al. (1998) and Poortinga et al. (2004) found that people who are more concerned about the environment are more likely to act in ways that benefit the environment. People with a strong environmental consciousness take aggressive steps to convey it to those around them (Kietzmann et al., 2015). Environmental efficacy perception (AE) impacts value dissemination to the community (SP).

Hypothesis 14: Perceptions of environmental efficacy influence the spread of green values within a community.

2.4.2.7. The goal is to buy green real estate and spread value throughout the community.

Kaur et al. (2018) investigated consumers' intentions to buy green products, which are influenced by their interactions with social media, such as family, friends, and mass media, which help them learn more about green products. As a result, the spread of knowledge through communication channels and word-of-mouth from consumers helps to shape attitudes (ATT), subjective norms (SN), and perceived behavioural control (PBC) towards green real estate. As a result, the higher the intention to purchase green real estate (IB), the greater the spread of green values throughout the community (SP).

Hypothesis 15: The intention to purchase green real estate impacts the spread of green values throughout the neighbourhood.

3. RESEARCH METHODOLOGY AND DATA COLLECTION

3.1. Research Objectives

Specific objectives and research questions are established to guide the development and design of the study, depending on the following essential points:

1. Assess respondents' level of awareness and desire to purchase green real estate.
2. Investigate the factors influencing respondents' intentions to buy green real estate and the drivers of their preparedness to promote green ideals to their social networks.
3. Make recommendations to increase consumer interest in green real estate.

3.2. Data collection

The questionnaire consists of five components. Section 1 collects demographic information about survey participants. Section 2 collects data on the Theory of Planned Behaviour, including Attitude (ATT), Subjective Norms (SN), and Perceived Behavioural Control (PBC), about the notion of green real estate, green credits, and environmental protection factors while selecting real estate. Section 3 collects participants' perceived environmental effectiveness (AE). Section 4 examines respondents' decision-making behaviour, also known as willingness to pay, which leads to the intention to purchase green real estate (IB). Section 5 is a new and independent section of the survey that collects information on participants' willingness to transmit green values (SP) and the latest developments in the real estate industry to the community.

The questionnaire was distributed via two channels. To assure quality, a survey was delivered directly to the respondents, who then distributed the questionnaire to others who fulfilled the broader sample criteria, such as acquaintances and family members. This strategy ensured sample quality, but the distribution of questionnaires resulted in poor response rates.

The second survey approach entailed disseminating the questionnaire through numerous real estate forums, groups, and online platforms via social media. While this distribution strategy provided adequate sample control, it was time-consuming and required additional work. Both techniques permitted respondents to contact the authors for clarification if they did not fully understand a question. This study blended the two methodologies to ensure a certain amount and quality of survey results.

The study ran for five months, from March to July 2024, and included people of all genders, ages, and occupations, most of whom were potential users. A total of 248 valid survey responses were received.

3.3. Sample size determination method

There are several approaches to calculating the ideal sample size in research. Hair et al. (2021) noted that only some procedures are accurate. Barclay et al. (1995) presented the "10 times rule" as a standard way of calculating the minimal sample size. According to this guideline, the minimum sample size should be at least ten times the number of routes coming into the measurement structure with the most paths. However, Hair et al. (2014) advise care when applying this approach because it only provides an approximate approximation and does not account for numerous other variables. A bigger sample size increases the dependability of the results. Hair et al. (2011) similarly recommend a minimum sample size of about 100, with an optimal range of 150 to 250, with higher sizes preferable.

The study team distributed 248 survey forms and obtained 248 genuine responses. This sample size also fits the preliminary guidelines for minimum sample sizes with a 99% confidence level and varied margins of error proposed by Saunders et al. (2009).

3.4. Research methodology

The authors' team used the Probit Regression approach to investigate the association between factors influencing the intention to buy green real estate. The Probit Regression approach is an effective analytical tool when the dependent variable is binary, such as "yes" or "no." This method uses a probability model with a cumulative normal distribution function to estimate the likelihood of an outcome using independent variables. Probit Regression in Stata is especially effective when the independent variables do not have a linear connection with the dependent variable, as it produces steady estimates that are less influenced by outliers, ensuring the correctness and dependability of the study results.

Research Model

Based on the hypotheses listed above, we first run the following probit regression research model to test the factors affecting the intention to purchase Green Real Estate:

$$IB = \beta_0 + \beta_1.SEX + \beta_2.AGE + \beta_3.INC1 + \beta_4.INC2 + \beta_5.PBC + \beta_6.SN1 + \beta_7.SN2 + \beta_8.SN3 + \beta_9.SN4$$

$$+\beta_{10}.SN_5 + \beta_{11}.SN_6 + \beta_{12}.SN_7 + \beta_{13}.SN_8 + \beta_{14}.SN_9 + \beta_{15}.SN_{10} + \beta_{16}.SN_{11} + \beta_{17}.ATT_1 + \beta_{18}.ATT_2 + \beta_{19}.AE + \varepsilon_i \quad (1)$$

We then ran probit regression model 2 to test the factors that influence the intention to "Spread of values to the community."

$$SP = \beta_0 + \beta_1.SEX + \beta_2.AGE + \beta_3.INC_1 + \beta_4.INC_2 + \beta_5.PBC + \beta_6.SN_1 + \beta_7.SN_2 + \beta_8.SN_3 + \beta_9.SN_4 + \beta_{10}.SN_5 + \beta_{11}.SN_6 + \beta_{12}.SN_7 + \beta_{13}.SN_8 + \beta_{14}.SN_9 + \beta_{15}.SN_{10} + \beta_{16}.SN_{11} + \beta_{17}.ATT_1 + \beta_{18}.ATT_2 + \beta_{19}.AE + \beta_{20}.IB + \varepsilon_i \quad (2)$$

Where:

Variables	Definitions	Value
IB	Dependent variable, the intention to purchase green real estate	IB = 0 if not, and IB = 1 if yes
SP	Dependent variable, the willingness to spread of green values to the community	SP = 0 if not, and SP = 1 if yes
SEX	Gender of the respondent	0= Male, 1 = Female, 2 = Other
AGE	Age of the respondent	1 = Under 22 years old, 2 = From 22 to 25 years old, 3 = From 35 to 45 years old, 4 = Above 65 years old.
INC1	Monthly personal income of the respondent	1 = Under 15 million, 2 = From 15 to 30 million, 3 = From 30 to 45 million, 4 = Above 45 million
INC2	Total monthly household income	1 = Under 30 million, 2 = From 30 to 60 million, 3 = From 60 to 90 million, 4 = Above 90 million
PBC	Perceived Behavioral Control—feeling that green real estate is a current trend	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN1	Water conservation and recycling in green real estate	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN2	Reducing energy usage, utilising renewable energy sources, and increasing resource efficiency in green real estate	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN3	Premium location with excellent transportation connectivity and convenient access in green real estate	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN4	An appropriate place to live, free of flooding and pollution, with easy access to transportation	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN5	Green real estate that is closely regulated and efficiently operated	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN6	Limiting exposure to hazardous compounds and reducing carbon emissions in green real estate	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Variables	Definitions	Value
SN7	Using renewable or reusable resources to create a sustainable environment with decreased energy consumption	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN8	Ensuring comfort and health by focusing on natural light, clear vistas, open spaces, and good air circulation	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN9	Proper waste management, reduced industrial emissions, and assessment of recycling strategies during construction and operation	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN10	Evaluating creative use of modern technology to improve energy efficiency and sustainability in green projects	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
SN11	Developers and contractors' understanding and promotion of sustainable construction and projects	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
ATT1	Reflects the degree of interest and knowledge individuals have about green standards in real estate, ranging from no interest to deep understanding	1 = Not interested, 2 = Heard of it but not very interested, 3 = Interested and have basic knowledge, 4 = Very interested and have a deep understanding
ATT2	Represents the level of consideration individuals give to green standards when deciding to purchase green real estate.	1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.
AE	Indicates individuals' evaluation of the quality of green real estate projects in Vietnam, reflecting their awareness of environmental effectiveness.	1 = Good, 2 = Average, 3 = Poor, 4 = Not concerned

Table 1: Variable description
(Source: Authors' compilation)

Note: ε_i denotes the error term of our model.

However, after testing the correlation coefficient between independent variables from models 1 and 2, we decided to eliminate variables SN6 and SN11 because they have high correlation coefficients (greater than 0.7).

4. FINDINGS AND DISCUSSION

4.1. Descriptive statistics

Variable	Obs	Mean	Std.Dev	Min	Max
SEX	248	1.447.581	0.5220582	0	2
AGE	248	2.129.032	0.6966402	1	4
INC1	248	1.669.355	0.9456637	1	4
INC2	248	2.145.161	1.066.179	1	4
PBC	248	4.060.484	0.9818036	1	5
SN1	248	4.314.516	102.097	1	5
SN2	248	4.258.065	1.021.002	1	5
SN3	248	4.350.806	0.9143034	1	5
SN4	248	4.596.774	0.6843461	2	5
SN5	248	4.391.129	0.870247	1	5
SN7	248	4.201.613	0.960599	1	5
SN8	248	4.516.129	0.7996342	1	5
SN9	248	4.459.677	0.8187993	1	5
SN11	248	4.270.161	0.9370882	1	5
ATT1	248	0.2862903	0.4529408	0	1
ATT2	248	3.947.581	1.014.707	1	5
IB	248	0.8104839	0.3927106	0	1
AE	248	3.060.484	1.263.138	0	4
SP	248	0.6612903	0.4742281	0	1

Table 2: Descriptive Statistics Analysis of Variables

(Source: Quantitative research results)

Descriptive statistical analysis provides the following interpretations:

The variables INC1 (individual income) and INC2 (household income) have mean values of 1.669 and 2.145, respectively, with standard deviations of 0.945 and 1.066. The difference between these two income groups suggests a disparity between individual and household incomes, with some individuals having higher personal incomes than others in the sample.

Perceived Behavioral Control (PBC) has a mean value of 4.060 and a standard deviation of 0.981. This suggests that most of the sample is highly aware of or interested in green real estate.

The variables related to Subjective Norms (SN) have mean values ranging from 4.165 to 4.596, with standard deviations between 0.684 and 1.021. This indicates that most respondents consider subjective norm factors essential, with low variability, suggesting consistency in perspectives regarding these factors.

Attitude (ATT) has mean values ranging from 0.286 to 3.947, with standard deviations between 0.453 and 1.014. This number indicates that respondents generally have a positive attitude toward the intention to purchase green real estate, but there is still some variability in their perspectives.

The intention to purchase green real estate (IB) has a mean value of 0.810 with a standard deviation of 0.392, indicating that most respondents intend to buy green real estate, although some still do not have this intention.

Environmental effectiveness perception (AE) has a mean value of 3.060 with a standard deviation of 1.263, indicating that most of the sample rates the quality of green real estate projects in Vietnam as poor. However, the data also shows a relatively high level of dispersion.

Value diffusion to the community (SP) has a mean value of 0.661 and a standard deviation of 0.474, showing that many people are prepared to share and disseminate values associated with green real estate.

4.2. Findings

4.2.1. Factors influencing the decision to buy green real estate

IB	Coef	Std Err	z	P > z	[95% Conf. Interval]	
SEX	-0.2870125	0.2257853	-1.27	0.204	-0.7295435	0.1555184
AGE	0.1311439	0.2024366	0.65	0.517	-0.2656246	0.5279124
INC1	-0.1820127	0.160485	-1.13	0.257	-0.4965574	0.1325321
INC2	0.0988329	0.1240768	0.80	0.426	-0.1443532	0.3420189
PBC	0.3526696	0.1373036	2.57	0.010	0.0835595	0.6217797
SN1	0.2899949	0.1453151	2.00	0.046	0.0051826	0.5748072
SN2	-0.2279799	0.1686707	-1.35	0.176	-0.5585684	0.1026087
SN3	-0.3547007	0.2060571	-1.72	0.085	-0.7585652	0.0491638
SN4	-0.2032913	0.2286793	-0.89	0.374	-0.6514946	0.244912
SN5	0.0615309	0.1993477	0.31	0.758	-0.3291834	0.4522453
SN7	0.0075085	0.2063485	0.04	0.971	-0.3969272	0.4119442
SN8	0.4730592	0.2395259	1.97	0.048	0.003597	0.9425214
SN9	-0.344212	0.2240478	-1.54	0.124	-0.7833376	0.0949135
SN10	-0.034672	0.1930549	-0.18	0.857	-0.4130526	0.3437086
ATT1	0.9556421	0.3620681	2.64	0.008	0.2460017	1.665283
ATT2	0.4044216	0.1389436	2.91	0.040	0.1320971	0.676746
AE	0.2471143	0.0795056	3.11	0.002	0.0912862	0.4029424
_cons	-2.195913	1.067529	-2.06	0.040	-4.288231	-.1035959

Table 3: Impact Coefficients of Factors Influencing Intention to Purchase Green Real Estate

(Source: Quantitative research results)

To acquire a better understanding of the factors impacting the intention to buy green real estate (IB), the study team examined each independent variable in the Probit regression model in the following manner:

Gender (SEX), age (AGE), and income (INC1, INC2) are not statistically significant.

Perceived Behavioral Control (PBC): This variable has a coefficient of 0.3527 and is statistically significant ($p = 0.010$), indicating that a higher perception of control can encourage the intention to purchase green real estate. This result aligns with the expectation that individuals with a higher sense of control are more likely to support environmentally friendly products.

Subjective Norms (SN): There are several variables associated with subjective norms, but the majority of these variables are not statistically significant, except SN1 (coefficient = 0.29, $p = 0.046$) and SN8 (coefficient = 0.473, $p = 0.048$). This outcome suggests that persons influenced by community or social factors (such as family and friends) considering the criteria above may be more likely to buy. However, the other variables are not statistically significant, indicating that not all subjective norms favour purchasing intention.

Attitude (ATT1, ATT2): The variable ATT1 has a coefficient of 0.9556 and is statistically significant ($p = 0.008$), whereas ATT2 has a coefficient of 0.4044 and is close to the significance level ($p = 0.040$). This result implies that having a good attitude towards green real estate is crucial and influences buying intention. Consumers who are favourable to green standards and products are more likely to purchase.

Perceived Environmental Effectiveness (AE): The coefficient of 0.247 indicates a positive impact, and this variable is statistically significant ($p = 0.002$). This suggests that the perception of environmental effectiveness has some influence on the intention to purchase, and it is an essential factor in this model.

4.2.2. Factors Influencing the Spread of Values to the Community

SP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
SEX	-0.1778172	0.1977557	-0.90	0.369	-0.5654113	0.2097768
AGE	0.017859	0.1853402	0.10	0.923	-0.3454011	0.3811191
INC1	0.1627192	0.1441468	1.13	0.259	-0.1198035	0.4452418
INC2	-0.2234655	0.1089176	-2.05	0.040	-0.43694	-0.0099911
PBC	0.1646033	0.1355991	1.21	0.225	-0.1011659	0.4303726
SN1	0.2476698	0.1474063	1.68	0.093	-0.0412412	0.5365808
SN2	0.2357601	0.1691976	1.39	0.163	-0.0958612	0.5673813
SN3	-0.1938973	0.1710298	-1.13	0.257	-0.5291096	0.141315
SN4	0.2243597	0.216878	1.03	0.301	-0.2007135	0.6494328
SN5	0.0192988	0.182497	0.11	0.916	-0.3383887	0.3769862
SN6	0.0067306	0.2220766	0.03	0.976	-0.4285317	0.4419928
SN7	-0.5421504	0.2007292	-2.70	0.007	-0.9355724	-0.1487284
SN8	-0.1276811	0.234547	-0.54	0.586	-0.5873849	0.3320227
SN9	0.030655	0.2123768	0.14	0.885	-0.3855959	0.4469058
SN10	-0.1767766	0.191087	-0.93	0.355	-0.5513003	0.1977471

SP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
SN11	0.0395932	0.1735299	0.23	0.820	-0.3005192	0.3797056
ATT1	0.2996505	0.2427768	1.23	0.217	-0.1761832	0.7754843
ATT2	0.3580139	0.1384226	2.59	0.010	0.0867106	0.6293171
IB	0.9070365	0.2967773	3.06	0.002	0.3253636	1.488709
AE	0.4670008	0.0929082	5.03	0.000	0.284904	0.6490975
_cons	-2.471064	0.9819468	-2.52	0.012	-4.395644	-0.5464833

Table 4: Impact Coefficients of Factors Influencing the Spread of Values to the Community.
(Source: Quantitative research results)

To better understand the factors impacting the spread of values to the community (SP), the authors analysed each independent variable in the Probit regression model in the following manner:

Gender, age (AGE), personal income (INC1), and perceived behavioural control (PBC) do not significantly impact SP.

Household income (INC2): The coefficient (-0.2235) indicates that household income has a negative impact on SP, with a p-value of 0.040, which is close to the statistical significance threshold ($p < 0$)

Subjective Norms (SN1–SN11): Among these parameters, SN7 stands out with a coefficient of -0.542 and a p-value of 0.007, showing a statistically significant negative impact on SP. This result indicates that this element could impede the spread of communal ideals. However, this must be proved in future investigations. Other factors (SN1–SN11, excluding SN7) are not statistically significant, with p-values > 0.05 , indicating that they have no meaningful impact on SP in the context of this study.

Attitude (ATT1 and ATT2): Attitudes have different effects on SP. ATT2 had a substantial positive impact (coefficient = 0.358, $p = 0.0010$), implying that this positive attitude is crucial in spreading community value. Conversely, ATT1 is not statistically significant ($p = 0.217$), indicating no evident impact.

Environmental Awareness (AE): A coefficient of 0.467 and a p-value of 0.000 shows that environmental awareness substantially and significantly benefits SP. This element is significant in the model because it emphasises the need to promote environmental awareness to encourage the diffusion of community values associated with green real estate.

Planning to Purchase Green Real Estate (IB): The coefficient of 0.907 and p-value = 0.002 show that the intention to buy green real estate significantly positively impacts SP, which is critical. This implies that people planning to purchase green real estate are more likely to help promote community ideals. This supports the concept that green consumption trends can spread within the community.

Constant (_cons): The coefficient (-2.471) with $p = 0.012$ indicates that if all explanatory factors are zero, the degree of community value propagation is negative. This suggests that community value dissemination could be higher, if not harmful, without influencing variables.

4.3. Hypothesis Testing

Based on the findings above, we created the summary table below to determine how the variables affect the two dependent variables:

Impact Variables	Dependent Variable: Intention to Purchase Green Real Estate (IB)	Dependent Variable: Dissemination of Community Values (SP)	Hypothesis Testing
Gender (SEX)	N/A	N/A	H1, H8: Rejected
Age (AGE)	N/A	N/A	H2, H9: Rejected
Income (INC)	N/A	INC2 has a negative impact	H3: Rejected, H10: Accepted
Perceived Behavioral Control (PBC)	+	N/A	H4: Accepted H11: Rejected
Subjective Norms (SN)	SN1 and SN8 have a positive impact	SN7 has a negative impact	H5: Accepted H12: Accepted
Attitude (ATT)	+	ATT2 has a positive impact	H6: Accepted H13: Accepted
Perceived Environmental Effectiveness (AE)	+	+	H7: Accepted H14: Accepted
Intention to Purchase Green Real Estate (IB)	No Hypothesis	+	H15: Accepted

Table 5: Summary of Research Results.
(Source: Quantitative research results)

Note: (1) Has an impact and in the same direction: +; (2) No statistically significant impact: N/A

5. CONCLUSION

The factors of perceived behavioural control (PBC), attitude (ATT), perceived environmental effectiveness (AE), subjective norm SN1, and SN8 are significant and have a substantial impact on the intention to purchase green real estate (IB).

The variables that are statistically significant and have a substantial impact on community value dissemination (SP) include SN7 (negative), ATT2 (positive), IB (positive), and AE. Environmental awareness (AE) and intention to purchase green real estate (IB) are critical to boosting community value diffusion. In contrast, the SN7 component must be carefully considered because it may present challenges. Other variables do not have a noticeable impact and will require additional investigation to determine their involvement.

Based on the results described above, we make the following recommendations:

- Increase educational initiatives that raise public awareness and knowledge of sustainable and green development

In terms of technical advancement, media channels aid in the dissemination of educational messages regarding green real estate and the raising of environmental awareness among clients. Customers who understand the benefits of a healthy living environment are more likely to buy and suggest these products. To promote the use of green aspects in construction projects, the government should facilitate the exchange of information on green standards and current technologies and benefit from international experiences.

- Creating a community that supports green products and sustainable practices

Like other green products, green real estate represents a community's shared awareness of green living practices. Establishing a community that shares a vision and knowledge of this sustainability trend fosters commerce between investors and like-minded customers and promotes common values and social advantages.

- Facilitate the process of acquiring and selling green real estate

The customer's intention to acquire is determined by the terms and financial incentives supplied by investors and the ease of accessing, learning about, and performing transactions. As a result, investors must develop adaptable policies and promotional tactics and offer expert customer support.

- Limitations of the study and suggestions for future research

Although the work has produced theoretical and practical contributions, it does have significant drawbacks. First, the study must balance Vietnam's regions, and the sample size is tiny and potentially unrepresentative. This can result in mistakes when representing the intention to buy green real estate and may not accurately capture the influencing elements in different places. Second, more research is needed on the inverse impacts of the variables INC2 (household income) and SN7 (use of renewable resources, creation of a sustainable environment, and energy conservation). Nonetheless, the study has set the road for future research on green real estate in Vietnam, and the limitations will be used to motivate future investigations.

REFERENCES

- [1] Ajzen, I., và Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- [2] Ajzen, I. (1991). *The theory of planned behaviour*. *Organisational Behavior and Human Decision Processes*, pp. 50, 179–211.
- [3] [http://dx.doi.org/10.1016/0749-5978\(91\)90020-T](http://dx.doi.org/10.1016/0749-5978(91)90020-T)
- [4] Bagozzi, R.P. Attitudes, intentions, and behaviour: A test of some key hypotheses.
- [5] *J. Personal. Soc. Psychol.* 1981, 41, 607. [Google Scholar]
- [6] Bảo, N. Đ., Phương, N. H., Mai, N. T., Sơn, B. G., Tuấn, N. A., Nguyễn, T. T., và Hương, N. T. L. Các nhân tố ảnh hưởng đến hành vi tiết kiệm và sử dụng năng lượng sạch của giới trẻ Việt Nam.
- [7] Bhattacharjee, A.; Sanford, C. The intention–Behaviour gap in technology usage: The moderating role of attitude strength. *Behav. Inf. Technol.* 2009, 28, 389–401. [Google Scholar]
- [8] Boland, R.J.J. và Tenkasi, R.V. (1995). ‘Perspective making and perspective taking in communities of knowing’, *Organization Science*, 6(4), 350-372.
- [9] Bordia, P., Irmer, B. E., & Abusah, D. (2006). Differences in sharing knowledge interpersonally and via databases: The role of evaluation apprehension and perceived benefits. *European journal of work and organizational psychology*, 15(3), 262-280.
- [10] BREGROUP. (n.d.). Over 100 years of science led solutions. BRE Group.
- [11] Retrieved September 1, 2024, from <https://bregroup.com/about/history/>
- [12] Chau, P.Y.K. and Hu, P.J.H., Information technology acceptance by individual professionals: a model comparison approach. *Decision Sciences*, 32(4): 699-719, (2001).
- [13] Cheng, Z. và Li, C. (2011). ‘Research on relationship between knowledge sharing and team performance in Rv&D Team’, proceeding of International Conference on Advances in Education and Management, Springer, Berlin, Heidelberg, 474- 481.
- [14] Chekima, B., Chekima, S., Syed Khalid Wafa, S. A. W., Igau, O. A., & Sondoh, S. L., Jr. (2016). Sustainable consumption: The effects of knowledge, cultural values, environmental advertising, and demographics. *The International Journal of Sustainable Development and World*
- [15] Davenport, T.H. và Prusak, L. (1998). *Working knowledge: How organisations manage what they know*, Harvard Business school Press.
- [16] Davis, F.D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Q.* 1989, 13, 319–340. [Google Scholar]
- [17] Duong, C. D., Doan, X. H., Vu, D. M., Ha, N. T., và Dam, K. V. (2022). The Role of Perceived Environmental Responsibility and Environmental Concern on Shaping Green Purchase Intention. *Vision*. <https://doi.org/10.1177/09722629221092117>
- [18] Đạt, T. V. CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN Ý ĐỊNH MUA CĂN HỘ XANH TẠI CÁC DỰ ÁN XANH VÙNG ĐÔNG NAM BỘ
- [19] Ellen, P.S., Wiener, J.L. and Cobb-Walgren, C. (1991). ‘The role of perceived consumer effectiveness in motivating environmentally conscious behaviours’, *Journal of Public Policy và Marketing*, 10, 102-117.
- [20] Fryxall, G. và Lo, C. (2003). ‘The influence on environmental knowledge and values on managerial behaviours on behalf of the environment: An empirical examination of managers in China’, *Journal of Business Ethics*, 46, 45-69.
- [21] Foss, N.J., Minbaeva, D.B., Pedersen, T. và Reinholt, M. (2009). ‘Encouraging knowledge sharing among employees: How job design matters’, *Human Resource Management*, 48(6), 871-893.
- [22] Fernando, E., Surjandy, M., và Touriano, D. (2018). Development and validation of instruments adoption-fintech services in Indonesia (perspective of trust and risk). 3rd International Conference on Sustainable Information Engineering and Technology, SIET 2018 -proceedings, October 2019, ~~232~~ <https://doi.org/10.1109/SIET.2018.8693192>.

- [26] Gagné, M. và Deci, E.L. (2005). 'Self-determination theory and work motivation', *Journal of Organizational Behavior*, 26, 331-362.
- [27] Gulamhuseinwala, I., Bull, T., và Lewis, S. (2015). FinTech is gaining traction and young, high-income users are the early adopters. *Journal of Financial Perspectives*, 3(3), 16–23 https://lampadia.com/assets/uploads_documentos/cca6f-ey_gfsi_journal_aw_lr.pdf#page=16.
- [28] GBS Vietnam. (n.d.). Tổng quan về hệ thống tiêu chí EDGE. Công Trình Xanh. Retrieved August 28, 2024, from <https://congtrinhxanhvn.com/tong-quan-ve-he-thong-tieu-chi-edge.html>
- [29] Guan, L., Abbasi, A., and Ryan, M. J. (2020). Analyzing green building project risk interdependencies using Interpretive Structural Modeling. *Journal of Cleaner Production*, 256, 120372
- [30] Gupta, A.K. và Govindarajan, V. (2000), 'Knowledge flows within multinational corporations', *Strategic Management Journal*, 21, 473-496.
- [31] Hair, J. F., Astrachan, C. B., Moisescu, O. I., Radomir, L., Sarstedt, M., Vaithilingam, S., & Ringle, C. M. (2021). Executing and interpreting applications of PLS-SEM: Updates for family business researchers. *Journal of Family Business Strategy*, 12(3), 100392.
- [32] Hendon, W. S. (1972). The park as a determinant of property values. *The Real Estate Appraiser*, September/October, 73–79.
- [33] Hendriks, P. (1999). 'Why share knowledge? The influence of ICT on the motivation for knowledge sharing', *Knowledge và Process Management*, pp. 6, 91–100.
- [34] Hou, Y., Chen, S., Yao, Z., Huang, Q., Shen, X., Cao, L., ... và Wang, X. (2023). Green Building Consumption Perception and Its Impact on Fitness Service Purchasing Intentions: An Extended Institutional Analysis and Development Decision-Making Model Analysis. *Buildings*, 13(10), 2536.
- [35] Hooff, B.V.D. và Ridder, J.A. (2004). 'Knowledge sharing in context: the influence of organizational commitment', *Journal of Knowledge Management*, 8(6), 117-130.
- [36] Hương, T. H. T. (2023). Mở rộng mô hình hành vi tiêu dùng có kế hoạch để giải thích ý định sử dụng sản phẩm bao bì xanh của du khách đến Nha Trang. *TẠP CHÍ KINH TẾ VÀ KINH DOANH*, 3(1).
- [37] Hu, Z., Ding, S., Li, S., Chen, L., và Yang, S. (2019). Adoption intention of fintech services for bank users: An empirical examination with an extended technology acceptance model. *Symmetry*, 11(3), 340.
- [38] <https://doi.org/10.3390/sym11030340>.
- [39] Hassan, M.G., Hirst, R., Siemieniuch, C. và Zobia, A.F. (2009). 'The impact of energy awareness on energy efficiency', *International Journal of Sustainable Engineering*, 2(4), 284-297.
- [40] Ibok, N. I., và Etuk, S. G. (2014). Socio-economic and demographic determinants of green consumption. *International Journal of Managerial Studies and Research*, 2(9), 47-56.
- [41] Insight, F. (2021). The State of Consumer Spending: Gen Z Influencing All Generations to Make Sustainability-First Purchasing Decisions.
- [42] Kamalanon, P., Chen, J. S., & Le, T. T. Y. (2022). "Why do we buy green products?" An extended theory of the planned behavior model for green product purchase behavior. *Sustainability*, 14(2), 689. <https://doi.org/10.3390/su14020689>
- [43] Kaur, J., Duggal, V., và Suri, S. (2018). To study the factors affecting the purchase of green products and their relation to the purchase decision of green products for Generation Z in India. *Journal of Asia Entrepreneurship and Sustainability*, 14(2), 21–63.
- [44] Kietzmann, J.H., Hermkens, K., McCarthy, I.P. và Silvestre, B.S. (2015). "Social media? Get serious! Understanding the functional building blocks of social media", *Business Horizons*, Vol. 54 No. 3, pp. 241–251.
- [45] Kongkajaroen, P., Panichpathom, S., và Ngarmyarn, A. (2014, June). The attitude of intention to purchase green condominium by Generation Y consumers. In *European Real Estate Society (ERES) Conference* (pp. 25-28).
- [46] Lah, U.; Lewis, J.R.; Šumak, B. Perceived usability and the modified technology acceptance model. *Int. J. Hum. Comput. Interact.* 2020, 36, 1216–1230. [Google Scholar]
- [47] Lu, T. (2014). Assessing the variables that influence the intention of green purchase, *Social Sciences Research*, 27–37.
- [48] Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing*, pp. 87–96.

- [49] Maichum, K., Parichatnon, S., & Peng, K. M. (2016). Application of the extended Theory of Planned Behavior model to investigate purchase intention of green products among Thai consumers. *Sustainability*, 8(10), 1077–1097.
- [50] Nelson, T., và Rabianski, J. (1988). Consumer Preferences in Housing Market Analysis: An Application of Multidimensional Scaling Techniques. *Real Estate Economics*, 16(2), 138-159. <http://dx.doi.org/10.1111/1540-6229.00451>.
- [51] Nguyễn, Q. H. (2020). Các yếu tố ảnh hưởng đến ý định mua căn hộ chung cư xanh của giới trẻ tại Hà Nội.
- [52] Meyliana, M., Fernando, E., và Surjandy, S. (2019). The influence of perceived risk and trust in adoption of fintech services in Indonesia. *CommIT (Communication and Information Technology) Journal*, 13(1), 31.
- [53] <https://doi.org/10.21512/commit.v13i1.5708>.
- [54] Mostafa, M. (2009). 'Shades of green: A psychographic segmentation of the green consumer in Kuwait using selforganizing maps', *Expert Systems with Applications*, 36(8), 11030–11038.
- [55] Poortinga, W.; Steg, L.; Vlek, C. Values, environmental concern, and environmental behavior: A study into household energy use. *Environ. Behav.* 2004, 36, 70–93.
- [56] Reizenstein, R. C. Hills, G. E. and Philp J. W (1974). Willingness to pay for control of air pollution: a demographic analysis in Curban R.C. (Eds) 1974 combined proceedings, American Marketing Association Chicago 11 p.323 – 328.
- [57] Samdahl, Diane & Robertson, Robert. (1989). Social Determinants of Environmental Concern: Specification and Test of the Model. *Environment and Behavior*. 21. 57-81. [10.1177/0013916589211004](https://doi.org/10.1177/0013916589211004).
- [58] Saunders, M. (2009). Research methods for business students. Person Education Limited.
- [59] Schultz, P.W.; Zelezny, L.C. Values and pro-environmental behavior. A five country survey. *J. Cross Cult. Psychol.* 1998, 29, 540–558.
- [60] Shi-Jer Lou, Yun-Shiue Yang, Ru-Chu Shih & Kuo-Hung Tseng (2007): A Study on the Knowledge Sharing Behaviour of Information Management Instructors at Technological Universities in Taiwan, *World Transactions on Engineering and Technical Education*, Vol.6, No.1, pp.143-148.
- [61] Stewart, H., và Jürjens, J. (2018). Data security and consumer trust in fintech innovation in Germany information và computer security data security and consumer trust in fintech innovation in Germany article information.
- [62] Tan, T.H. Satisfaction and motivation of homeowners towards green homes. *Soc.*
- [63] *Indic. Res.* 2014, 116, 869–885.
- [64] Tan, W.L.; Goh, Y.N. The role of psychological factors in influencing consumer purchase intention towards green residential building. *Int. J. Hous. Mark. Anal.* 2018, 11, 788–807.
- [65] Taylor, s., và Todd, p. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International journal of research in marketing*, 12(2), 137–155.
- [66] Teo, A. C., Tan, G. W. H., Cheah, C. M., Ooi, K. B., và Yew, K. T.(2012). Can
- [67] The demographic and subjective norms influence the adoption of mobile banking? *International Journal of Mobile Communications*, 10(6), 578–597. <https://doi.org/10.1504/IJMC.2012.049757>.
- [68] Thompson, Ron & Barclay, Donald & Higgins, C.A.. (1995). The partial least squares approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Studies: Special Issues on Research Methodology*. 2. 284-324.
- [69] Tổng cục Thống kê. (2024, April 25). Hà Nội, ngày 25 tháng 4 năm 2024 THÔNG CÁO BÁO CHÍ KẾT QUẢ KHẢO SÁT MỨC SỐNG DÂN CƯ 2023 1. Một
- [70] s K. Tổng cục Thống kê. Retrieved August 31, 2024, from <https://www.gso.gov.vn/wp-content/uploads/2024/04/Thong-cao-bao-chi-KSMS2023.pdf>
- [71] Trần Linh Huân và Hà Gia Linh (2024), “Pháp luật về phát triển dự án bất động sản xanh tại Việt Nam”. *Tạp chí Ngân hàng*. <https://tapchinganhang.gov.vn/phap-luat-ve-phat-trien-du-an-bat-dong-san-xanh-tai-viet-nam.htm>.
- [72] U.S. Green Building Council (USGBC). (n.d.). Mission and vision | U.S. Green Building Council. USGBC. Retrieved September 1, 2024, from <https://www.usgbc.org/about/mission-vision>
- [73] Văn phòng Sản xuất và tiêu dùng bền vững - Bộ Công Thương. (2021, 10 03). 5 chứng chỉ công trình bền vững phổ biến thế giới. 5 chứng chỉ công trình bền vững phổ biến thế giới. <https://scp.gov.vn/tin-tuc/t12412/5-chung-chi-cong-trinh-ben-vung-pho-bien-the-gioi.html>.

- [74] Vietnam Green Building Council. (n.d.). Green Database | Vietnam Green Building Council. Green Database. Retrieved August 28, 2024, from <https://greendatabase.vgbc.vn/en/>.
- [75] Violand, W., và Simon, A. (2011). Real estate brokers: Do they inflate housing prices? The case of France.
- [76] Wang, S., Chen, S., và Nah, K. (2024). Exploring the mechanisms influencing users' willingness to pay for green real estate projects in Asia based on technology acceptance modeling theory. *Buildings*, 14(2), 349.
- [77] World Green Building Council (2008). World Green Building Council. Available at <http://www.worldgbc.org/> [Accessed February 22, 2008- May 4, 2008]
- [78] Wu, J.H.; Chen, Y.C.; Lin, L.M. Empirical evaluation of the revised end user computing acceptance model. *Comput. Hum. Behav.* 2007, 23, 162–174. [Google Scholar].
- [79] Zahan, I., Chuanmin, S., Fayyaz, M., & Hafeez, M. (2020). Green purchase behavior towards green housing: an investigation of Bangladeshi consumers. *Environmental Science and Pollution Research*, 27, 38745-38757.
- [80] Zhang, L., Chen, L., Wu, Z., Zhang, S. và Song, H. (2018). 'Investigating young consumers' purchasing intention of green housing in China', *Sustainability*, 10(4), 1- 15.

APPENDIX

Research Questionnaires

Section 1 includes demographic information such as gender (SEX), age (AGE), and income.

Category	Measurement Criteria		Options		
Basic Personal Information - Demographics	SEX	Gender	1	Male	<input checked="" type="radio"/>
			2	Female	<input checked="" type="radio"/>
			3	Other	<input checked="" type="radio"/>
	AGE	Age	1	Under 22 years old	<input checked="" type="radio"/>
			2	From 22 to 25 years old	<input checked="" type="radio"/>
			3	From 35 to 45 years old	<input checked="" type="radio"/>
			4	Above 65 years old	<input checked="" type="radio"/>
	INC1	Monthly Personal Income	1	Under 15 million	<input checked="" type="radio"/>
			2	From 15 to 30 million	<input checked="" type="radio"/>
			3	From 30 to 45 million	<input checked="" type="radio"/>
			4	Above 45 million	<input checked="" type="radio"/>
	Category	Measurement Criteria		Options	
Basic Personal Information - Demographics	INC2	Total Monthly Household Income	1	Under 30 million	<input checked="" type="radio"/>
			2	From 30 to 60 million	<input checked="" type="radio"/>
			3	From 60 to 90 million	<input checked="" type="radio"/>
			4	Above 90 million	<input checked="" type="radio"/>

Table 6: Demographic Factors Question Statistics

(Source: Authors' compilation)

Section 2: The Theory of Planned Behavior, Including Attitude (ATT), Subjective Norms (SN), and Perceived Behavioral Control (PBC)

Category	Measurement Criteria		Options		
Attitude	ATT1	Do you care about green standards in real estate?	1	Not interested	<input type="radio"/>
			2	Heard of it but not very interested	<input type="radio"/>
			3	Interested and have basic knowledge	<input type="radio"/>
			4	Very interested and have a deep understanding of green standards in real estate	<input type="radio"/>

Table 7: Statistical Overview of Questions on Attitude Factors (Variable ATT1)

(Source: Authors' compilation)

Category	Measurement Criteria		1	2	3	4	5
Attitude	ATT2	Do you care about green standards when buying green real estate?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Table 8: Statistics of Questions about Attitude Factor (variable ATT2)

(Source: Authors' compilation)

Category	Measurement Criteria	1	2	3	4	5	
Subjective Norms	SN1	Water Conservation and Recycling	●	●	●	●	●
	SN2	Reducing energy usage, utilising renewable energy sources, and increasing resource efficiency.	●	●	●	●	●
	SN3	Having a premium position and excellent transportation connectivity - Situated in a desired area with a vast, roomy size adjacent to essential roads, offering convenient, safe, and congestion-free access between routes.	●	●	●	●	●
	SN4	An appropriate place to live that is free of flooding and pollution and has easy access to transportation.	●	●	●	●	●
	SN5	Closely regulated and efficiently operated.	●	●	●	●	●
	SN6	Limiting exposure to hazardous compounds and lowering carbon emissions.	●	●	●	●	●
	SN7	Using renewable/reusable resources creates a sustainable environment with decreased energy consumption.	●	●	●	●	●
	SN8	Ensure comfort and health by focussing on natural light, keeping clear vistas, open spaces, and good air circulation, among other things.	●	●	●	●	●
	SN9	Waste is appropriately managed, industrial emissions are reduced, and waste management and recycling strategies are assessed during construction and operation.	●	●	●	●	●
	SN10	Evaluate the project's creative use of modern technology to improve energy efficiency and sustainability.	●	●	●	●	●
	SN11	The developers and contractors understand the importance of sustainable construction and actively promote participation in sustainable projects.	●	●	●	●	●

Table 9: Statistical Questions about Subjective Norms Factor

(Source: Authors' compilation)

Category	Measurement Criteria		1	2	3	4	5
Perceived Behavioral Control	PBC	Do you feel that green real estate is a current trend?	●	●	●	●	●

Table 10: Summary of Questions on Perceived Behavioral Control Factor
(Source: Authors' compilation)

Section 3: Environmental Effectiveness Awareness (AE)

Category	Measurement Criteria		Options		
Environmental Effectiveness Awareness	AE	How do you assess the quality of green real estate projects in Vietnam today?	1	Good	●
			2	Average	●
			3	Poor	●
			4	Not interested	●

Table 11: Survey Question Statistics on Environmental Effectiveness Awareness Factor
(Source: Authors' compilation)

Section 4: Willingness to Pay Leading to the Intention to Buy Green Real Estate (IB)

Category	Measurement Criteria		Options		
Intention to buy green real estate	IB	Are you willing to pay more for green real estate to ensure a better and healthier living environment?	1	Yes	●
			2	No	●

Table 12: Statistics on questions regarding the intention to buy green real estate
(Source: Authors' compilation)

Section 5: Respondents' willingness to disseminate green values (SP) to the community through new real estate trends.

Category	Measurement Criteria		Options		
Spreading principles throughout the community.	SP	Do you recommend green real estate developments that match the necessary criteria to your friends and family?	1	Yes	●
			2	No	●
			3	Not sure	●

Table 13: Shows statistics on questions about the factor of disseminating values in the community.
(Source: Authors' compilation)